NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CRITICAL AREA PLANTING
(acre)
CODE 342

DEFINITION

Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

PURPOSE

- Stabilize areas with existing or expected high rates of soil erosion by water.
- Restore degraded sites that can not be stabilized through normal methods.

CONDITIONS WHERE PRACTICE APPLIES

On areas with existing or expected high rates of erosion or degraded sites that usually cannot be stabilized by ordinary conservation treatment and/or management, and if left untreated, could be severely damaged by erosion or sedimentation or could cause significant off-site damage.

CRITERIA

General Criteria Applicable to All Purposes

Species selected for seeding or planting shall be suited to current site conditions and intended uses. Selected species will have the capacity to achieve adequate density and vigor within an appropriate time frame to stabilize the site sufficiently to permit suited uses with ordinary management activities.

Site preparation and seeding or planting shall be done at a time and in a manner to insure survival and growth of the selected species.
Gullies, borrow areas, mine spoils, and other rough areas will be smoothed and shaped to permit the use of equipment for establishment and maintenance of vegetation. Grade slopes in the treated are too not less that 2:1.

Seedbed Preparation for Grasses and Legumes

After smoothing and shaping, the soil will be pulverized to a minimum depth of 4 inches and harrowed to a uniformly smooth surface, where possible.

Seedbed Preparation for Ground Cover Plants, Vines, and Shrubs

Prepare seedbed as in grasses and legumes above. To improve soil physical condition, incorporate manure, peat, or rotted sawdust during seedbed preparation.

For steep slopes and larger planting areas, make individual plant site preparation by digging holes and add fertilizer and other media for each plant.

Additional Criteria For Planting

Seeding. Plant seed on a well-prepared seedbed. Plant seed with a cultipacker seeder, grain drill, or sow with a hand seeder. If a cultipacker cannot be used, allow rain to settle freshly prepared seedbed before planting, then harrow before planting. Plant seeds and cover lightly. Only viable, high quality, and adapted seed or planting stock will be used.

Hydraulic seeding. Apply seed in slurry in

combination with fertilizer and wood cellulose.

Sodding and sprigging. Plant Bermudagrass sprigs or sod with a mechanical planter or by hand.

Trees and shrubs. Plant according to practice code 612. Temporary cover will be planted to provide immediate protection, on sites planted to trees, to control soil erosion. Temporary cover shall be present for the duration of the rainy season.

Tables 1-4 will provide additional planting guidance for critical area sites in Arkansas.

Fertilization.

Permanent seeding of grasses and mixtures of grasses and legumes
Apply approximately 48 pounds of actual N-P-K fertilizer per acre prior to final seedbed preparation or at the time of planting. Topdress with about 50 pounds of actual N 4 to 8 week intervals during the establishment period. Comply with the 590 standard.

English ivy, Baltic ivy, and vining honeysuckle
Apply approximately one pound of actual N-P-K fertilizer per 1000 sq. ft. immediately after planting and repeat 4 to 6 weeks later.

Bermudagrass sod plantings on plunge basins, and other small or steep areas
Topdress with 1/2 to 3/4 pound of ammonium nitrate, or its equivalent per 100 sq. ft. after planting and repeat 4 to 6 weeks.

Liming

Lime according to the extension service soil test report or 2 ton per acre on soils with pH below 5 and I ton on soils with pH values ranging from 5.0 to 5.8.

Mulching.

All planted areas, except those to be used for hay and grazing or where solid sod is applied, shall be mulched with acceptable mulching material. Refer to mulching practice code 484.

Fertilization, mulching, or other facilitating practices for plant growth shall be timed and applied to accelerate establishment of selected species. [States will specify fertilizer and mulching rates] If the recommended fertilizer rate exceeds the criteria in Nutrient Management (Code 590), appropriate mitigating practices will be installed to reduce the risk of nutrient losses from the site.

(Move to O&M)
Control or exclude pests that will interfere with the timely establishment of vegetation.

Comply with all applicable federal, state, and local laws and regulations.

Additional Criteria To Restore Degraded Sites

If gullies or deep rills are present, they will be filled or leveled, if feasible, to allow equipment operation and ensure proper site and seedbed preparation.

Soil amendments will be added as necessary to ameliorate or eliminate physical or chemical conditions that inhibit plant establishment and growth. [States will specify these - examples are compost or manure to add organic matter and improve soil structure and water holding capacity; agricultural limestone to increase the pH of acid soils; elemental sulfur to lower the pH of calcareous soils]

CONSIDERATIONS

Species or mixes that are native and have multiple values should be considered.

Avoid species that may harbor pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

Solid sodding, sod should be dense and well established. The sod should be at least 90 percent pure, free of weeds.

Sod should be planted within 24 hours after harvesting.

Sod should be watered to wet the sod about two to three inches just prior to placement.

The sod should be placed closely together to avoid open spaces. Stagger the sod strips. Do not overlap. Roll or tap the sod after placement to ensure good soil-to-seed contact. On slopes greater than 4:1, secure the sod to the soil surface with wooden pegs or staples. Cover the upper edge of the sodded area with a sod retention blanket for protection against water lifting and undercutting the sod. Use wire staples to anchor the blanket. Immediately after the sod has been anchored, water until water reaches the soil beneath. Water for about two week or until good roots are well established in the soil beneath.

Silt fence or hidabales may be needed for concentrated flow areas. Place silt fences at least 24 inches high across the concentrated flow area. The bottom of the fence should be buried at least two inches below the surface. Attach the burlap to the steel post in an upright position using small gauge fence wire. Don't remove the fence until the sod in the concentrated flow is well established. Hidabales can be placed across the concentrated flow area to control erosion. The hay bales should be placed length-ways with the cut side up in a trench across the concentrated flow area leaving four to six inches above the trench or soil line.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded and filed using the approved specification sheets or narrative statements in the conservation plan.

OPERATION AND MAINTENANCE

Use of the area shall be managed as long as necessary to stabilize the site and achieve the intended purpose.

Inspections, reseeding or replanting, fertilization, and pest control may be needed to insure that this practice functions as intended throughout its expected life.

OPERATIONS AND MANAGEMENT

Control or exclude pests that will interfere with the timely establishment of vegetation.

Comply with all applicable federal, state, and local laws and regulations. Comply with practice code 595.

REFERENCES

Arkansas Cooperative Extension Service Publication.

Specifications for forage, hay, wildlife habitat, recreation, and protection of structural measures and roadside.

Warm Season Grasses

Plant Species	Seeding Rate Lbs Per Acre Alone	Mixture 1/	Seeding Date	Planting Depth (inches)	Area of Adaptation	Native or Introduced	Annual or Perennial
Bahiagrass 2/	30	20	5/1 - 11/1	¾	S 1/2	Intro.	P
Bermudagrass, Hybrid 2/ 5/	25,000 sprigging	20,000 sprigging	3/1 - 4/15	½	A	Intro.	P
Bermudagrass, Common (hulled) 2/	10	5	3/1 - 4/15	¼	A	Intro.	P
Bermudagrass, Common (Unhulled)2/	8	3	3/1 - 4/15	¼	A	Intro.	P
Big Bluestem	15	10	4/1 - 5/15	¼	N 1/3	Native	P
Dallasgrass 2/	30	20	5/1 - 6/15	¼ to ½	A	Intro.	P
Eastern Gamagrass 2/	15	10	4/1 - 5/15		A	Native	P
Indiangrass	15	10	12/15 - 4/10	½ - ¾	A	Native	P
Switchgrass	8	6	4/1 - 5/1	¼	N 1/2	Native	P
Vaseygrass	20	15	3/1 - 4/1	¼	S	Intro.	P
Millet, Foxtail 4/	40	30	4/1 - 5/15	½ to 1	A	Intro.	A
Millet, Pearl 4/	40	30	5/1 - 7/15	1 to 2	A	Intro.	A
Millet, Browntop 4/	40	30	4/1 - 8/15	½ to 1	A	Intro.	A
Millet, Japanese 4/	40	30	4/1 - 8/15	½ to 1	A	Intro.	A
Millet, Proso 4/	50	35	4/1 - 8/15	½ to 1	A	Intro.	A
Weeping Lovegrass	5	3	4/1 - 6/15	¼		Intro.	P

5/ For roadside purposes, do not use sprigs.

Cool Season Grasses

Plant Species	Seeding Rate Lbs Per Acre Alone	Mixture 1/	Seeding Date	Planting Depth (inches)	Area of Adaptation	Native or Introduced	Annual or Perennial
Annual Ryegrass 4/	60	40	9/1 - 10/1	½	A	Intro.	A
Oats	150	120	9/1 - 10/1	1 ½ to 2	A	Intro.	A
Orchardgrass	30	20	3/1-4/15 or 9/1-10/1	¼	N ½	Intro.	A
Prairie grass	40	30	9/1		A		A
Red top	15	12	8/1 - 9/1		N ¼		
Reed Canarygrass	12	8	4/1 - 5/1	½	N ¼	Native	P
Rye 4/	150	120	9/1 - 10/1	1 to 2	A	Intro.	A
Triticale*	150	120	9/1 - 10/1		A	Intro.	
Tall Fescue	20	15	9/1 - 10/1 or 2/1 - 3/1	½	N ¾	Intro.	
Timothy*	15	10	8/1 - 9/1		N ¼	Intro.	A
Wheatgrass	30	20	8/1 - 9/1	1 to 1 ½	A	Intro.	A
Smooth Bromgrass	30	20	9/1 - 10/1 or 2/1 - 3/1		N ½		

Cool Season Legumes

Plant Species	Seeding Rate Lbs Per Acre Alone	Mixture 1/	Seeding Date	Planting Depth (inches)	Area Of Adaptation	Native Or Introduced	Annual Or Perennial
Clover, Alsike 3/	30	20	9/1 - 11/1	¼	N ¼	Intro.	P
Clover, Arrowleaf 3/ T/	8	5	9/15 - 10/15	¼	A	Intro.	A
Clover, Ball 3/	5	4	9/15 - 10/15	¼	A	Intro.	A
Clover, Crimson 3/ 4/	20	15	9/1 - 10/15	½	A	Intro.	A
Crownvetch 3/	15	10	9/15 - 10/15	½	N ½	Intro.	P
Red Clover (Biannual) 3/	15	10	3/1 - 4/1 or 9/1 - 10/1	¼	A	Intro.	P
Clover, Rose 3/	15	10	9/1 - 11/1	½	S 1/2	Intro.	A
Clover, Subterranean 3/	30	20	9/15 - 11/1	¼	A	Intro.	A
Clover, White 3/ 4/	10	6	2/15 - 3/15 or 9/15 - 10/15	¼	A	Intro.	P
Pea, Caley 3/	30	20	9/15 - 11/1	½	A	Intro.	A
Pea, Rough 3/	30	20	9/15 - 11/1	½	A	Intro.	A
Pea, Singletary 3/	30	20	9/15 - 11/1	½	A	Intro.	A
Vetch, Hairy 3/ 4/	20	15	9/1 - 11/1	½	A	Intro.	A
Vetch, Common 3/ 4/	20	15	9/1 - 11/1	½	A	Intro.	A

1/ seed mixtures should include at least one perennial species.

2/ when planting warm season species in late summer, after August 30th, mix with cool season species having rapid growth rate to provide immediate protection.

3/ inoculate legumes with proper inoculant.

4/ plant species that will provide temporary cover, to provide erosion control while the perennial species gets established.

Note: Under annual and perennial: "P" - denotes perennial species and "A" - denotes annual species

Under area of adaptation: "N" - denotes northern part of state, "S" - denotes southern part of state and "A" – denotes the entire state.